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SERIAL NUMBER	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/056,029	04/30/93	BOYCE	J FM-112J

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15N1/0628

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ART UNIT	PAPER NUMBER
1504	2

DATE MAILED: 06/28/94

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

☒ This application has been examined ☐ Responsive to communication filed on _____ ☐ This action is made final.

A shortened statutory period for response to this action is set to expire 3 month(s), 22 days from the date of this letter.
Failure to respond within the period for response will cause the application to become abandoned. 35 U.S.C. 133

Part I THE FOLLOWING ATTACHMENT(S) ARE PART OF THIS ACTION:

- | | |
|---|--|
| 1. <input checked="" type="checkbox"/> Notice of References Cited by Examiner, PTO-892. | 2. <input checked="" type="checkbox"/> Notice re Patent Drawing, PTO-948. |
| 3. <input checked="" type="checkbox"/> Notice of Art Cited by Applicant, PTO-1449. | 4. <input type="checkbox"/> Notice of Informal Patent Application, Form PTO-152. |
| 5. <input type="checkbox"/> Information on How to Effect Drawing Changes, PTO-1474. | 6. <input type="checkbox"/> _____ |

Part II SUMMARY OF ACTION

1. ☒ Claims 1-23 are pending in the application.
Of the above, claims 5, 8, 21 and 23 are withdrawn from consideration.
2. ☐ Claims _____ have been cancelled.
3. ☐ Claims _____ are allowed.
4. ☒ Claims 1-4, 6, 7, 9-19, 20 and 22 are rejected.
5. ☐ Claims _____ are objected to.
6. ☐ Claims _____ are subject to restriction or election requirement.
7. ☐ This application has been filed with Informal drawings under 37 C.F.R. 1.85 which are acceptable for examination purposes.
8. ☐ Formal drawings are required in response to this Office action.
9. ☐ The corrected or substitute drawings have been received on _____. Under 37 C.F.R. 1.84 these drawings are ☐ acceptable. ☐ not acceptable (see explanation or Notice re Patent Drawing, PTO-948).
10. ☐ The proposed additional or substitute sheet(s) of drawings, filed on _____ has (have) been ☐ approved by the examiner. ☐ disapproved by the examiner (see explanation).
11. ☐ The proposed drawing correction, filed on _____, has been ☐ approved. ☐ disapproved (see explanation).
12. ☐ Acknowledgment is made of the claim for priority under U.S.C. 119. The certified copy has ☐ been received ☐ not been received
☐ been filed in parent application, serial no. _____; filed on _____.
13. ☐ Since this application appears to be in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under Ex parte Quayle, 1935 C.D. 11; 453 O.G. 213.
14. ☐ Other

EXAMINER'S ACTION

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The following is a quotation of the first paragraph of 35 U.S.C. § 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as lack of enablement. The only "reinforcing elements" contemplated are fibers and the use of particulate fillers, metal bars and the like is beyond the enabling disclosure. The only "adherents" disclosed are brazing materials and prepregs so the use of adherents such as nails, screws, pressure sensitive or hot-melt adhesives, twine, etc. is beyond the scope of the disclosed enablement.

Claims 1-4, 6, 7, 9-19, 20 and 22 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.

Election/Restriction

Restriction to one of the following inventions is required under 35 U.S.C. 121:

Group I. Claims 1-4, 6, 7, 9-19, 20 and 22, drawn to a method of joining composite parts with or without a non-composite part, classified in Class 156, subclass 89.

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Group II. Claims 5, 8, 21, and 23, drawn to a joined composite part, classified in Class 428, subclass 408.

The inventions are distinct, each from the other because of the following reasons:

Inventions Group I and Group II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (M.P.E.P. § 806.05(h)). In the instant case the process as claimed can be practiced with another materially different product such as joining a composite part to a non-composite part or two non-composite parts.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, and since their fields of search are not co-extensive, restriction for examination purposes as indicated is proper.

During a telephone conversation with Kirk Teska on 4/28/94 a provisional election was made with traverse to prosecute the invention of Group I, claims 1-4, 6, 7, 9-19, 20 and 22. Affirmation of this election must be made by applicant in responding to this Office action. Claims 5, 8, 21, and 23 are

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withdrawn from further consideration by the Examiner, 37 C.F.R. § 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 C.F.R. § 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a diligently-filed petition under 37 C.F.R. § 1.48(b) and by the fee required under 37 C.F.R. § 1.17(h).

The following is a quotation of 35 U.S.C. § 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Subject matter developed by another person, which qualifies as prior art only under subsection (f) or (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Claims 1,3,7,9-13,14,15 and 19 are rejected under 35 U.S.C. § 103 as being unpatentable over Boyce et al.

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Boyce et al discloses a method of preparing a composite structure comprising the steps of providing a composite structure that includes an array of reinforcing fibers in a resin matrix, applying reinforcement structure to a surface of said composite alone or in conjunction with stiffening structures or the like, said reinforcement structure including a body of thermally decomposable material that has opposed surfaces, a plurality of reinforcing elements in the body which extend generally per^{pend}icularly to one of the opposed surfaces, and pressure intensifying structure on the other opposed body surface, and subjecting the reinforcing structure to elevated temperature and pressure to insert the reinforcing elements into the composite structure as the body of decomposable thermally material collapses under the influence of the elevated temperature and pressure. The material of the reinforcing element has sufficient rigidity to penetrate the composite structure without buckling and may be of an elemental material such as boron. An elevated temperature may be then sustained or further increased for a period sufficient to cause curing of the matrix resin. Supplemental pressure may be applied throughout or selectively for various periods during the processing cycle to consolidate the composite laminate and enhance penetration action of the reinforcing elements. (Note columns 1 and 2). Therefore, the applicants' method of joining composite parts and or non-

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composite parts would appear to be the same as or at least obvious over the method of the reference.

Claims, 2³, 4, 6⁷, 14, 15 and 19 are rejected under 35 U.S.C. § 103 as being unpatentable over Holko in view of Kreider et al.

Holka discloses a process for joining carbon-carbon composite components. An interlayer is sandwiched between the two surfaces and the assembly is held together under compression while it is heated to a temperature to melt the interlayer material or to cause interfussion between the interlayer and the carbon-carbon composite material. The carbon-carbon composite is formed by a process that essentially corresponds to applicants' method except for the absence of reinforcement elements covered with brazen foil. (Note the Summary of the Invention). Krieder et al discloses a method of fabricating fiber reinforced composites.

It contemplates the use of filaments as, for example, boron. A single filament is wound on a mandrel which is covered with a brazen foil. (Note the Summary of the Invention). It would have been obvious to combine the respective teachings of the references by employing the reinforcement elements with brazen foil of Krieder et al into the carbon-carbon composite of Holko inorder to provide high strength, high rigidity, and high resistance to deterioration at elevated temperatures.

Any inquiry concerning this communication should be directed to Kathryn E. Shelborne at telephone number (703) 308-2351.





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GROUP 150